

# THE ASTROPHYSICAL JOURNAL

Founded in 1895 by George E. Hale and James E. Keeler

HELMUT A. ABT  
*Managing Editor*  
Kitt Peak National Observatory

JOHN S. GALLAGHER III  
*Associate Managing Editor*  
Lowell Observatory

A. DALGARNO  
*Letters Editor*  
Center for Astrophysics

EUGENE H. AVRETT  
*Deputy Letters Editor*  
Center for Astrophysics

YERVANT TERZIAN  
*Associate Editor*  
Cornell University

VIRGINIA TRIMBLE  
*Associate Editor*  
University of Maryland and  
University of California, Irvine

DAVID J. HELFAND  
*Associate Letters Editor*  
Columbia University

NICHOLAS Z. SCOVILLE  
*Associate Letters Editor*  
California Institute of Technology

STUART L. SHAPIRO  
*Associate Letters Editor*  
Cornell University

## AAS PUBLICATIONS BOARD

CATHERINE PILACHOWSKI (1989-1992), *Chairperson*  
Kitt Peak National Observatory

DAVID W. LATHAM (1989-1990)  
Center for Astrophysics

JEREMY R. MOULD (1988-1991)  
California Institute of Technology

LEIF J. ROBINSON (1988-1991)  
Sky Publishing Corporation

FRANÇOIS SCHWEIZER (1990-1993)  
Carnegie Institution of Washington

JACQUELINE H. VAN GORKOM (1990-1993)  
Columbia University

*Manuscript Editor:* WALTER G. GLASCOFF III

*Production Manager:* SYLVIA M. HECIMOVICH

*Production:* GRACE S. WHITE

---

VOLUME 348, PART 2  
1990 JANUARY 1 AND JANUARY 10



PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS FOR  
THE AMERICAN ASTRONOMICAL SOCIETY

© 1990 BY THE AMERICAN ASTRONOMICAL SOCIETY. ALL RIGHTS RESERVED.  
PUBLISHED SEMIMONTHLY

---

COMPOSED BY SANTYPE INTERNATIONAL LIMITED, SALISBURY, ENGLAND

PRINTED BY CAPITAL CITY PRESS, INC.

MONTPELIER, VERMONT, U.S.A.

# THE ASTROPHYSICAL JOURNAL LETTERS

## CONTENTS OF VOLUME 348, PART 2

1990 JANUARY 1, Number 1

	Page	Fiche
THE AGES OF HIGH-REDSHIFT RADIO GALAXIES..... <i>K. C. Chambers and Stéphane Charlot</i>	L1	6-A7
DETECTION OF [Si $\nu$ ] 1.962 MICRONS AND NEW OBSERVATIONS OF INFRARED H, [Fe II], AND H <sub>2</sub> LINE EMISSION IN THE SEYFERT GALAXY NGC 1068 ..... <i>E. Oliva and A. F. M. Moorwood</i>	L5	6-A11
ARE MOLECULAR CLOUDS IN VIRIAL EQUILIBRIUM? ..... <i>Phil Maloney</i>	L9	6-B1
OBSERVATION OF INTERSTELLAR POLARIZATION AT 2.2 AND 3.8 MICRONS ..... <i>Tetsuya Nagata</i>	L13	6-B6
CONVECTIVE INSTABILITIES IN SN 1987A ..... <i>Willy Benz and Friedrich-Karl Thielemann</i>	L17	6-B11
LIMIT ON OVERSHOOTING FROM THE CONVECTIVE CORE IN UPPER MAIN-SEQUENCE STARS <i>Richard B. Stothers and Chao-wen Chin</i>	L21	6-C1
ESCAPE OF BEAMED EMISSION FROM GAMMA-RAY BURSTS ON MAGNETIZED NEUTRON STARS <i>Cheng Ho, Richard I. Epstein, and Edward E. Fenimore</i>	L25	6-C6
THE POSSIBLE NATURE OF "SOCKET" STARS IN H II REGIONS..... <i>Michael W. Castela</i>	L29	6-C11
IS THERE A CLASSICAL HYADES LITHIUM PROBLEM? ..... <i>Fritz J. Swenson, Guy S. Stringfellow, and John Faulkner</i>	L33	6-D3
THE PERIODICITIES IN THE INFRARED EXCESS OF G29-38: AN OSCILLATING BROWN DWARF? <i>Mark S. Marley, Jonathan I. Lunine, and William B. Hubbard</i>	L37	6-D8
A NEW COMPUTATION OF THE INFRARED ABSORPTION BY H <sub>2</sub> PAIRS IN THE FUNDAMENTAL BAND AT TEMPERATURES FROM 600 TO 5000 K ..... <i>Aleksandra Borysow and Lothar Frommhold</i>	L41	6-E1
INSTRUCTIONS TO AUTHORS OF LETTERS .....		Inside Back Cover

1990 JANUARY 10, Number 2

	Page	Fiche
IN SITU MEASUREMENT OF THE COSMIC MICROWAVE BACKGROUND TEMPERATURE AT A DISTANCE OF 7.5 KILOPARSECS ..... <i>A. Kogut, S. J. Petuchowski, C. L. Bennett, and G. F. Smoot</i>	L45	13-A10
STRONG MOLECULAR HYDROGEN EMISSION FROM THE LOW-LUMINOSITY NUCLEUS OF M51 <i>Daniel F. Lester and Keith L. Thompson</i>	L49	13-B1
DENSE MOLECULAR CLOUDS AND THE ARP 220 STARBURST ..... <i>P. M. Solomon, Simon J. E. Radford, and D. Downes</i>	L53	13-B5
<sup>9</sup> Be ABUNDANCES IN POPULATION II STARS: IMPLICATIONS FOR LIGHT ELEMENT NUCLEOSYNTHESIS <i>Sean G. Ryan, M. S. Bessell, Ralph S. Sutherland, and John E. Norris</i>	L57	13-B10
DETECTION OF SYNCHROTRON EMISSION FROM A UNIQUE HH-LIKE OBJECT IN ORION <i>F. Yusef-Zadeh, T. J. Cornwell, Bo Reipurth, and M. Roth</i>	L61	13-C1
VELOCITY STRUCTURE OF THE ORION-IRc2 SiO MASER: EVIDENCE FOR AN 80 AU DIAMETER CIRCUMSTELLAR DISK..... <i>R. L. Plambeck, M. C. H. Wright, and J. E. Carlstrom</i>	L65	13-C7
COLLISIONAL PUMPING OF WATER MASERS BY SPECIES OF PARTICLES AT DIFFERENT TEMPERATURES <i>Nels Anderson and William D. Watson</i>	L69	13-C11

## CONTENTS

	<i>Page</i>	<i>Fiche</i>
EXPANDING FORCE-FREE MAGNETIZED PLASMOID ..... <i>W.-H. Yang</i>	L73	13-D1
LINE BROADENING OF Mg x $\lambda\lambda 609$ AND 625 CORONAL EMISSION LINES OBSERVED ABOVE THE SOLAR LIMB <i>Donald M. Hassler, Gary J. Rottman, Edward C. Shoub, and Thomas E. Holzer</i>	L77	13-D6
INDEX TO VOLUME 348, PARTS 1 AND 2 .....	i	7-B1
INSTRUCTIONS TO AUTHORS OF <i>LETTERS</i> .....	<i>Inside Back Cover</i>	

